This listing of claims will replace all prior versions, and listings, of claims in the application:

#### Listing of Claims:

1. (Currently Amended) An actinic ray curable composition containing a photo acid generator, and an oxetane compound I of the following formula,

wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ , and  $R_6$  independently represent a hydrogen atom, a fluorine atom, an alkyl group having from 1 to 6 carbon atoms, a fluoroalkyl group having from 1 to 6 carbon atoms, an allyl group, an aryl group, a furyl group or a thienyl group, provided that  $R_3$ ,  $R_4$ ,  $R_5$ , and  $R_6$  are not simultaneously hydrogen atoms, and wherein the longer C-O bond distance of the two C-O bond distances in the formula is from 0.1464 to 0.1500 nm, and wherein the composition has a viscosity at 25°C of from 7 to 50 mPa·s.

Claim 2 (Canceled).

3. (Previously Presented) The actinic ray curable composition of claim 1, wherein the composition further contains an oxetane compound II represented by formula 2, 3, 4 or 5 or an oxetane compound III represented by formula 6 or 7, Formula 2

$$\begin{array}{c|c}
R_1 & Z - R_7 \\
R_6 & R_6 \\
R_7 & R_7
\end{array}$$

Formula 3

$$R_{4}$$
 $R_{3}$ 
 $R_{2}$ 
 $R_{5}$ 
 $R_{5}$ 

Formula 4

$$R_8 - Z - Z - R_7$$
 $R_4 - Z - R_7$ 
 $R_6 - Z - R_7$ 
 $R_6 - Z - R_7$ 

Formula 5

$$R_8 - Z - R_1 - R_2 - Z - R_7$$

wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  independently represent a hydrogen atom or a substituent, and Z represents an oxygen atom, a sulfur atom, a divalent hydrocarbon group or a divalent hydrocarbon group in which an oxygen atom or a sulfur atom is intervened,

#### Formula 6

$$\begin{bmatrix} R_1 & Z \\ R_4 & R_6 \\ R_3 & O & R_5 \end{bmatrix}_m$$

#### Formula 7

$$\begin{bmatrix} R_1 & R_2 \\ R_4 & & \\ R_3 & & \\ \end{bmatrix}_m R_5$$

wherein  $R_1$  through  $R_6$  independently represent a hydrogen atom, a fluorine atom, an alkyl group having a carbon atom number of from 1 to 6 such as a methyl group, an ethyl group, a propyl group or a butyl group, a fluoroalkyl group having a carbon atom

number of from 1 to 6, an allyl group, an aryl group, or a furyl group; m is 2, 3 or 4; Z represents an oxygen atom, a sulfur atom, a divalent hydrocarbon group or a divalent hydrocarbon group in which an oxygen atom or a sulfur atom is intervened; and R<sub>9</sub> represents a straight chain or branched chain alkylene group having from 1 to 12 carbon atoms, a straight chain or branched chain poly(alkylene oxy) group, or a divalent group selected from the group consisting of the following formula 9, 10 and 11,

Formula 9

wherein n represents an integer of from 0 to 2000;  $R_{11}$  represents an alkyl group having from 1 to 10 carbon atoms or a group represented by the following formula 12; and  $R_{12}$  represents an alkyl group having from 1 to 10 carbon atoms,

Formula 12

wherein j represents an integer of from 0 to 100;  $R_{13}$  represents an alkyl group having from 1 to 10 carbon atoms, Formula 10

wherein  $R_{14}$  represents an alkyl group having from 1 to 10 carbon atoms, an alkoxy group having from 1 to 10 carbon atoms, a halogen atom, a nitro group, a cyano group, a mercapto group, an alkoxycarbonyl group or a carboxyl group,

Formula 11

wherein  $R_{15}$  represents an oxygen atom, a sulfur atom, -NH-, -SO-, -SO<sub>2</sub>-, -(CH<sub>2</sub>)-, -C(CH<sub>3</sub>)<sub>2</sub>- or -(CF<sub>3</sub>)<sub>2</sub>-.

4. (Original) The actinic ray curable composition of claim

1, wherein the composition further contains an oxirane compound
having an oxirane ring.

#### Claim 5 (Canceled).

6. (Currently Amended) An actinic ray curable composition containing a photo acid generator, and an oxetane compound I' of the following formula,

$$R_1$$
  $C$   $R_2$   $R_6$   $R_3$   $O$   $R_5$ 

wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ , and  $R_6$  independently represent a hydrogen atom, a fluorine atom, an alkyl group having from 1 to 6 carbon atoms, a fluoroalkyl group having from 1 to 6 carbon atoms, an allyl group, an aryl group, a furyl group or a thienyl group, provided that  $R_3$ ,  $R_4$ ,  $R_5$ , and  $R_6$  are not simultaneously hydrogen atoms, and wherein in the formula, the longer C-O bond distance of the two C-O bond distances is from 0.1435 to 0.1461 nm, and the oxygen atom has a charge of from -0.330 to -0.281, and wherein the composition has a viscosity at 25°C of from 7 to 50 mPa·s.

#### Claim 7 (Canceled).

8. (Previously Presented) The actinic ray curable composition of claim 6, wherein the composition further contains an oxetane compound II represented by formula 2, 3, 4 or 5 or an oxetane compound III represented by formula 6 or 7, Formula 2

$$R_4$$
  $R_5$   $R_6$   $R_6$   $R_6$ 

Formula 3

$$R_4$$
  $R_2$   $Z-R_7$ 

Formula 4

$$R_8 - Z - Z - R_7$$
 $R_6$ 
 $R_6$ 
 $R_6$ 

Formula 5

$$R_8-Z-R_1$$
 $R_3$ 
 $R_5$ 
 $R_5$ 

wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  independently represent a hydrogen atom or a substituent, and Z represents an oxygen atom, a sulfur atom, a divalent hydrocarbon group or a divalent hydrocarbon group in which an oxygen atom or a sulfur atom is intervened,

#### Formula 6

$$\begin{bmatrix} R_1 & Z \\ R_4 & R_6 \\ R_3 & 0 & R_5 \end{bmatrix}_m$$

Formula 7

$$\begin{bmatrix} R_1 & R_2 \\ R_4 & Z \\ R_3 & O & R_5 \end{bmatrix}_m R_5$$

wherein R<sub>1</sub> through R<sub>6</sub> independently represent a hydrogen atom, a fluorine atom, an alkyl group having a carbon atom number of from 1 to 6 such as a methyl group, an ethyl group, a propyl group or a butyl group, a fluoroalkyl group having a carbon atom

number of from 1 to 6, an allyl group, an aryl group, or a furyl group; m is 2, 3 or 4; Z represents an oxygen atom, a sulfur atom, a divalent hydrocarbon group or a divalent hydrocarbon group in which an oxygen atom or a sulfur atom is intervened; and R, represents a straight chain or branched chain alkylene group having from 1 to 12 carbon atoms, a straight chain or branched chain poly(alkylene oxy) group, or a divalent group selected from the group consisting of the following formula 9, 10 and 11,

Formula 9

Formula 12

wherein n represents an integer of from 0 to 2000; R11 represents an alkyl group having from 1 to 10 carbon atoms or a group represented by the following formula 12; and  $R_{12}$  represents an alkyl group having from 1 to 10 carbon atoms,

wherein j represents an integer of from 0 to 100;  $R_{13}$  represents an alkyl group having from 1 to 10 carbon atoms, Formula 10

wherein  $R_{14}$  represents an alkyl group having from 1 to 10 carbon atoms, an alkoxy group having from 1 to 10 carbon atoms, a halogen atom, a nitro group, a cyano group, a mercapto group, an alkoxycarbonyl group or a carboxyl group,

#### Formula 11

wherein  $R_{15}$  represents an oxygen atom, a sulfur atom, -NH-, -SO-, -SO<sub>2</sub>-, -(CH<sub>2</sub>)-, -C(CH<sub>3</sub>)<sub>2</sub>- or -(CF<sub>3</sub>)<sub>2</sub>-.

9. (Original) The actinic ray curable composition of claim 6, wherein the composition further contains an oxirane compound having an oxirane ring.

#### Claim 10 (Canceled).

11. (Currently Amended) An actinic ray curable ink, containing pigment, a photo acid generator, and an oxetane compound I of the following formula,

$$R_1$$
  $R_2$   $R_6$   $R_6$   $R_8$   $R_8$   $R_8$ 

wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ , and  $R_6$  independently represent a hydrogen atom, a fluorine atom, an alkyl group having from 1 to 6 carbon atoms, a fluoroalkyl group having from 1 to 6 carbon atoms, an allyl group, an aryl group, a furyl group or a thienyl group, provided that  $R_3$ ,  $R_4$ ,  $R_5$ , and  $R_6$  are not simultaneously hydrogen atoms, and wherein the longer C-O bond distance of the two C-O bond distances in the formula is from 0.1464 to 0.1500 nm, and wherein the composition has a viscosity at 25°C of from 7 to 50 mPas.

12. (Currently Amended) An actinic ray curable ink, containing pigment, a photo acid generator, and an oxetane compound I' of the following formula,

wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ , and  $R_6$  independently represent a hydrogen atom, a fluorine atom, an alkyl group having from 1 to 6 carbon atoms, a fluoroalkyl group having from 1 to 6 carbon atoms, an allyl group, an aryl group, a furyl group or a thienyl group, provided that  $R_3$ ,  $R_4$ ,  $R_5$ , and  $R_6$  are not simultaneously hydrogen atoms, and wherein in the formula, the longer C-O bond distance of the two C-O bond distances is from 0.1435 to 0.1461 nm, and the oxygen atom has a charge of from -0.330 to -0.281, and wherein the composition has a viscosity at 25°C of from 7 to 50 mPa:s.

Claim 13-20 (Cancelled).

# This Page is Inserted by IFW Indexing and Scanning Operations and is not part of the Official Record

### **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:
☐ BLACK BORDERS
☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
☐ FADED TEXT OR DRAWING
☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
☐ SKEWED/SLANTED IMAGES
☐ COLOR OR BLACK AŅD WHITE PHOTOGRAPHS
GRAY SCALE DOCUMENTS
LINES OR MARKS ON ORIGINAL DOCUMENT
REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
Потить.

## IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.